

83-#87-#11106

ASSESSMENT REPORT

GEOLOGICAL, GEOCHEMICAL AND TRENCHING REPORT  
ON THE

ACAPULCO GROUP INCLUDING THE

Acapulco	Co
Aca	Sun
Pul	Star Claims

DRYBROUGH PEAK AREA  
OMINECA MINING DIVISION

by

M.A. STAMMERS

LOCATION:                    N.T.S. 94E/2W  
                               57°12' N Latitude  
                               126°57' W Longitude

OWNER/OPERATOR:        SEREM LTD.

DATES WORK PERFORMED:    From August 19 to September 13, 1982

DATE OF REPORT:        January 1983

M.A. STAMMERS.

tek.

GEOLOGICAL BRANCH  
ASSESSMENT REPORT

11,106

## TABLE OF CONTENTS

	<u>Page</u>
INTRODUCTION .....	1
GEOLOGY .....	5
MINERALIZATION .....	8
Copper .....	8
Lead-Zinc .....	8
Iron .....	8
TRENCHING REPORT .....	10
GEOCHEMICAL SURVEY .....	12
GEOCHEMICAL ANALYSIS .....	12
RESULTS OF GEOCHEMICAL SURVEY .....	13
CONCLUSIONS .....	13
RECOMMENDATIONS .....	14
CERTIFICATE OF QUALIFICATIONS .....	15
STATEMENT OF EXPENDITURES	
A. PHYSICAL WORK .....	16
C. GEOLOGICAL, GEOCHEMICAL WORK .....	17

### LIST OF TABLES

Table 1. Claims data and work performed.	4
Table 2. List of assays.	9
Table 3. Star Claim - Magnetite Showings, Trenching Results	10

### LIST OF FIGURES

Figure 1. Location Map	2
Figure 2. Claims Map	3
Figure 3. General Geology	6
Figure 4. Geology, Mineralization and Assays	In Pocket
Figure 5. Soil Geochemistry and Trenching Results - Star Claims	11

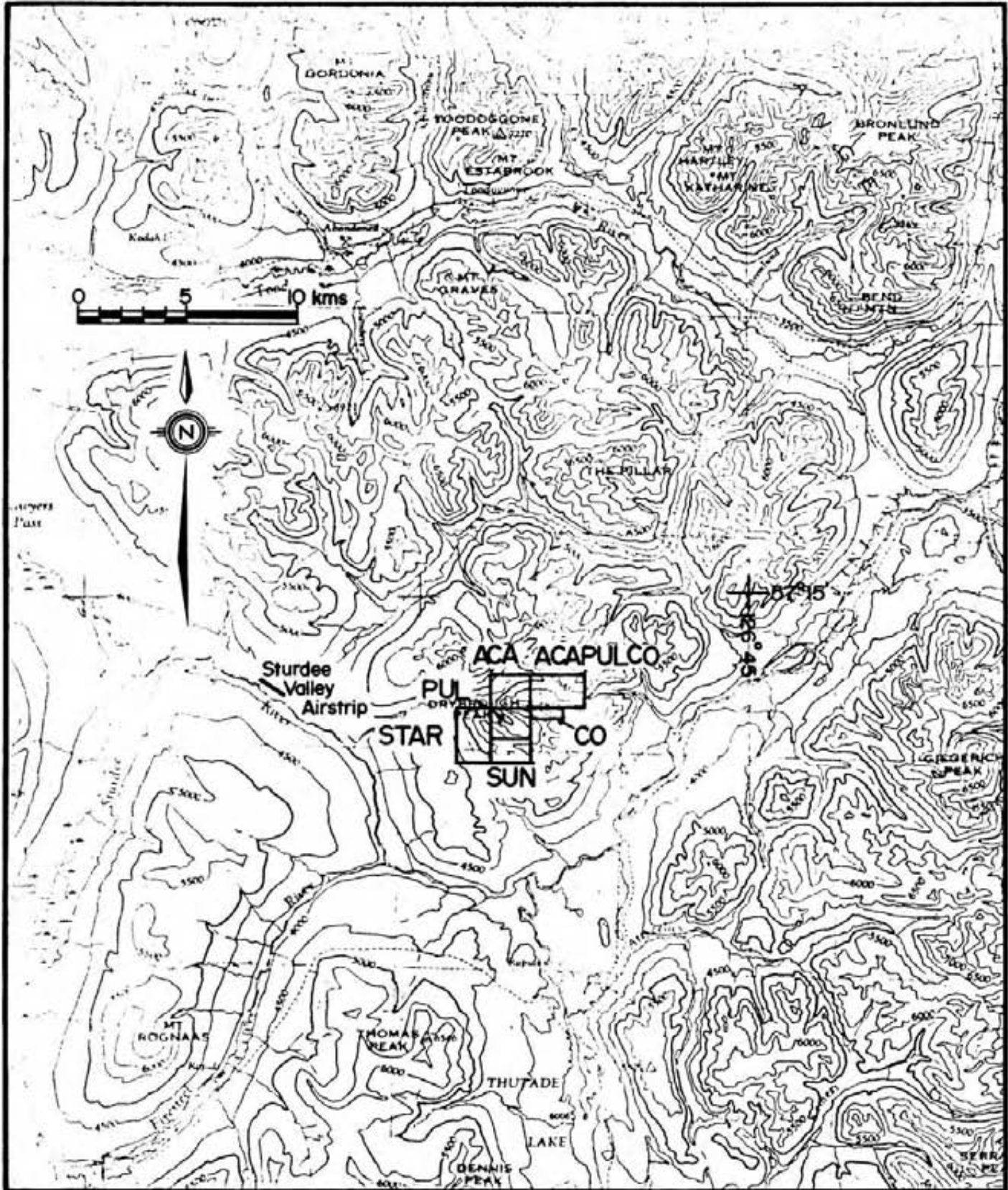
## INTRODUCTION

The Acapulco group of claims are located 264 kilometres north of Smithers, B.C. at latitude  $57^{\circ}12'$  north and longitude  $126^{\circ}57'$  west in the Drybrough Peak area, Toodoggone River map sheet (94E/2W), Omineca Mining Division (Figure 1). Access is by air from Smithers to Sturdee Airstrip and then by helicopter 6 kilometres to the property.

Elevations on the property range from 1400 metres to 2065 metres above sea level. Tree line is between 1520 metres and 1650 metres above sea level. Outcrop patterns are variable with best exposures along the steep mountain ridges and the poorest in drift-filled valleys below treeline.

The Acapulco group is owned and operated by Serem Ltd. and includes the Acapulco, Aca, Pul, Co, Sun and Star claims (Figure 2). Adjoining claims owned by Serem Ltd. include the Gotch 2 to the north and the Star 2 enclosed by the Sun and Pul claims.

Table 1 outlines claim information and summarizes the work performed on the claims during the 1982 field season:

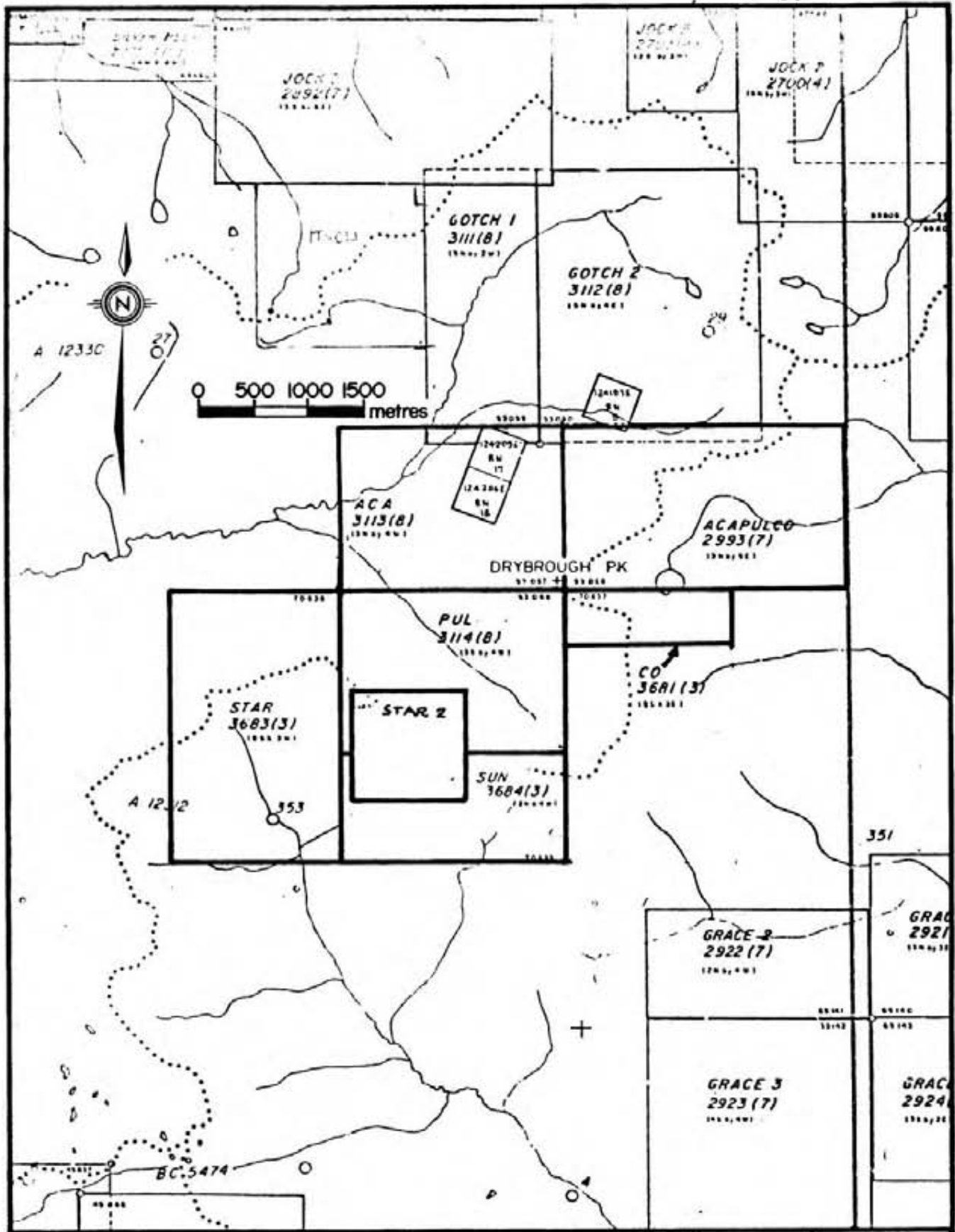


### LOCATION MAP:

ACA, ACAPULCO, PUL, CO, STAR and SUN CLAIMS  
 JANUARY 1983 N.T.S. 94E

FIGURE:

I



**CLAIMS MAP:**  
 ACAPULCO, ACA, PUL, CO, SUN and STAR CLAIMS  
 JANUARY 1983 N.T.S. 94E

FIGURE:  
**2**

Table 1. Acapulco Group  
Claims Data and Work Performed

Claim Name	Acapulco	Aca	Pul	Sun	Co	Star
Record No.	2993	3113	3114	3684	3681	3683
No. of Units	15	12	12	8	3	15
Record Date	28.07.80	15.08.80	15.08.80	26.03.81	26.03.81	26.03.81
Expiry Date	28.07.83	15.08.83	15.08.83	26.03.84	26.03.83	26.03.84
Geol. Mapping @ 1:25,000	0.05 km <sup>2</sup>	0.05 km <sup>2</sup>	0.50 km <sup>2</sup>	0.10 km <sup>2</sup>	0.30 km <sup>2</sup>	None
Geol. Mapping @ 1:2,000	None	None	0.90 km <sup>2</sup>	0.45 km <sup>2</sup>	None	0.90 km <sup>2</sup>
Detailed Pros- pecting. Total area 6.25 km <sup>2</sup>	Yes	Yes	Yes	Yes	Yes	Yes
Rock Samples Grab & Chip Sampling	2	0	2	12	0	7
Soil Samples (Gold-Silver)	0	0	0	0	0	12
Trenching	None	None	None	None	None	1 trench 5m <sup>3</sup>

Previous assessment work performed by Serem Ltd. in 1980 and 1981 includes geochemical and prospecting surveys.

The purpose of the 1982 program was to evaluate known mineral occurrences and to map and prospect in detail those occurrences with respect to the general geological setting.

Past work by others in the immediate area has focused on copper-molybdenum mineralization.

Current exploration by Serem Ltd. and others in the Toodoggone area is concerned with precious metal (gold-silver) mineralization.

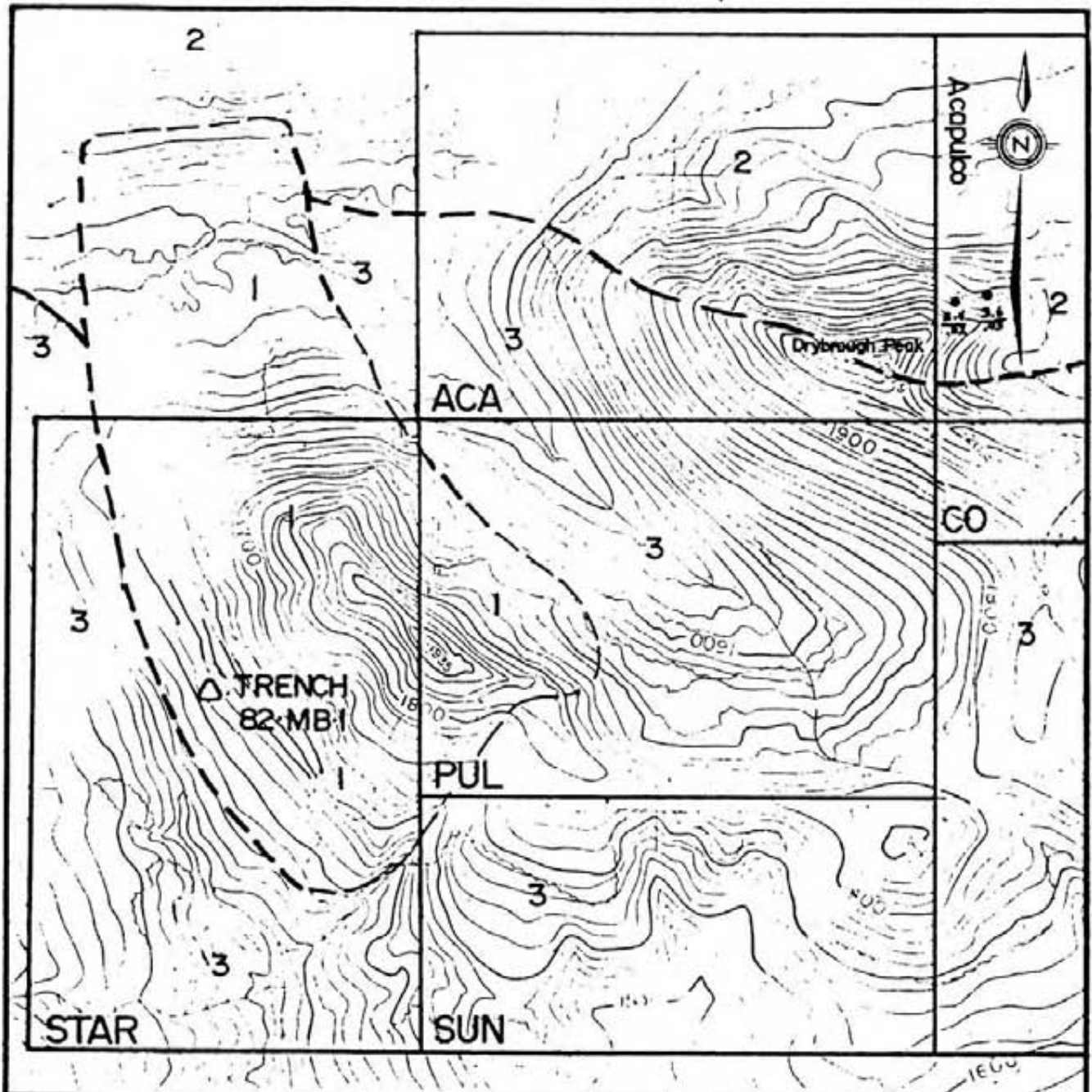
#### GEOLOGY

Major emphasis was placed on geological mapping of the Acapulco group of claims during the 1982 field season. Detailed geological mapping of the limestone-skarn-intrusive contact area is displayed in Figure 4. Figure 3 summarizes the general geology of the claims area.

Principal lithologies considered include limestone, marble, skarn, gabbro and granodiorite to quartz monzonite.

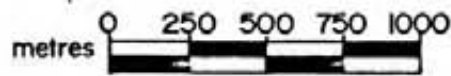
Permian Asitka group limestone outcrops extensively along the ridge to the southwest of Drybrough Peak. The limestone is very massive, finely to coarsely recrystallized, and weathers very light grey.

Continuous reaction of the limestone by contact metamorphic and metasomatic processes has led to the formation of variably composed marble and skarn lithologies.



**GENERAL GEOLOGY**  
*ACAPULCO GROUP OF CLAIMS*

SCALE: 1:25,000



<b>PERMIAN</b>	<b>TRIASSIC</b>	<b>JURASSIC</b>
1 ASITKA GP. Limestone	2 TAKLA GP. Basalt	3 OMINECA GP. Intrusion

ROCK ASSAY  
 2.4 SILVER oz/ton  
 8.02 GOLD  
 NTS 94E  
 January 83

**FIGURE**  
 3



The marble unit varies from pale green-grey to medium green or grey with local salmon pink colouration. Marble grades into and is intimately interbedded with varying skarn lithologies and recrystallized limestone.

Skarn is found throughout the property in general proximity to either the main intrusive body or its related sills and dykes. Skarn composition varies over the Acapulco group from a 'low grade' wollastonite-diopside-calcite skarn to a 'high grade' garnet-diopside member. The lower grade material comprises the majority of the skarn while garnet-diopside skarn is restricted to smaller, isolated pockets.

Chalcopyrite, bornite, malachite, galena, sphalerite, pyrrhotite, magnetite and pyrite mineralization is hosted by both skarn types.

A 5 to 10-metre wide sill-like body of hornblende-pyroxene-gabbro outcrops in a linear fashion along the 1800-metre contour. This dark green, coarsely crystalline gabbro cross-cuts the limestone and may represent late stage dyking off the main Omineca intrusion. Rocks of the main Omineca intrusion have been assigned to the Lower Jurassic period and include many mappable dykes and sills. Composition ranges from quartz monzonite to granodiorite. Textures range from fine-grained aphanitic to coarse-grained pegmatitic. Alteration assemblages include prophyllitic and argillic. Rare copper-chalcopyrite and molybdenite is associated within the intrusive complex.

The structural geology of the area is characterized by modest fracturing of the limestone that most likely occurred during the intrusive events, minor faulting, and probable gross deformation (folding, faulting) of the limestone unit.

Subvertical fracturing in the 110°-160° directions appears to be the principal controlling conduit for skarnification. Due to the massive nature of the limestone, the role bedding plays in skarn morphology is minimized.

### MINERALIZATION

Mineralization discovered to date is highly erratic with regard to type and grade. The size of the mineralized showings is also limited to well below sub-economic dimensions. Samples were assayed for gold-silver only. Table 2 lists assay results with occurrence definition.

#### Copper

Copper occurs as chalcopyrite, bornite, tetrahedrite and malachite mineralization and is found in skarn and vein type showings. Precious metal values of up to 4.4 oz/ton silver and 0.06 oz/ton gold are associated with copper mineralization. No copper analyses were made.

#### Lead-Zinc

Galena, skarn-type, mineralization is the most common mineralization found on the property. Associated precious metal values are low to absent, with no gold values reported from galena-only bearing skarns. Lesser amounts of sphalerite are associated with some of the lead-bearing skarns.

#### Iron

Only two occurrences of iron-bearing skarns have been located to date. The most important, a magnetite-bearing skarn with associated gold values, is described separately in the "Trenching Report" section that follows. A second float occurrence of pyrrhotite-bearing skarn returned 0.05 oz/ton gold.



TRENCHING REPORT

Hand trenching and chip channel sampling was carried out over the central Star claim area in response to favourable gold and silver values obtained from an earlier outcrop grab sample (see Figure 4).

The trench 82-MB 1, trends approximately 240° for 6 metres down a gentle slope and is approximately 1 metre wide by 1 metre deep on average. Overburden was removed and good bedrock exposed over the length of the trench. Refer to Figure 5, or Table 3, for trench sample results.

Trenching exposed a minimum of 5 metres of massive magnetite mineralization containing occasional chalcopyrite and malachite. The upslope contact (northeast) is open and more magnetite mineralization can be expected here. The downslope (southwest) end of the trench contains highly weathered and altered granodiorite of the main Omineca intrusion.

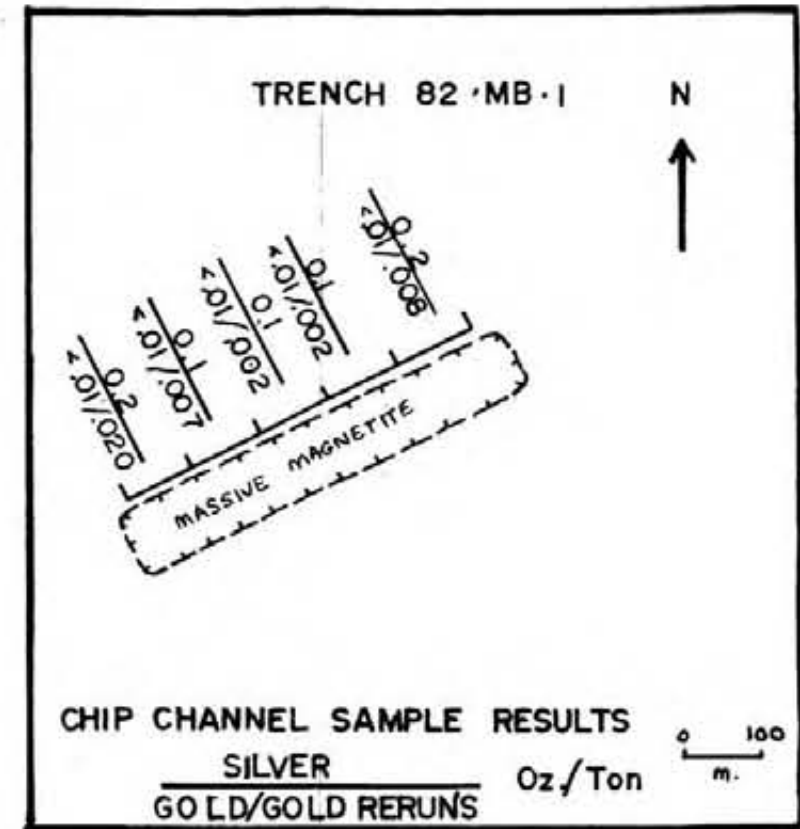
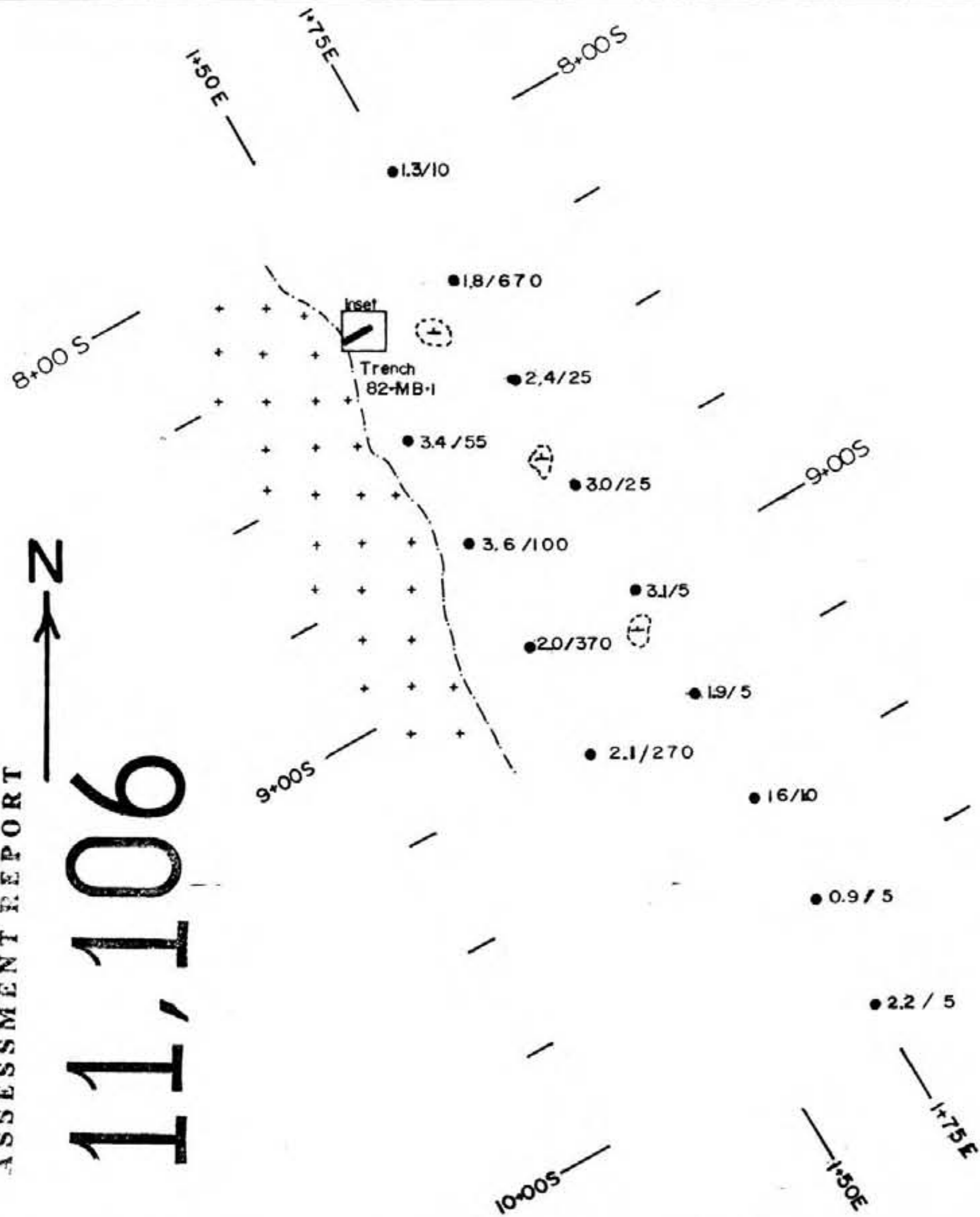
Assay results from the initial grab sample are encouraging - 2.4 oz/ton silver and 0.38 oz/ton gold. Subsequent trench sampling failed to reveal the source of the gold. Further trenching is required.

Table 3. Magnetite Showings (Star Claim)  
Trench MB 1, Chip Channel Samples

Tag No.	Interval (metres)	Silver (Oz/ton)	Gold (Oz/ton)	Re-run Gold (Oz/ton)
4553	0 - 1	0.2	<.01	.008
4554	1 - 2	0.1	<.01	.002
4555	2 - 3	0.1	<.01	.002
4556	3 - 4	0.1	<.01	.007
4557	4 - 5	0.2	<.01	.020

GEOLOGICAL BRANCH  
ASSESSMENT REPORT

11,106



SEREM LTD.

TOODOGGONE PROJECT  
STAR CLAIMS, ACAPULCOGP.

SOIL GEOCHEMISTRY Ag-Au  
& TRENCHING RESULTS

SYMBOLS & LITHOLOGY		SCALE 1:1000	
● 3.4/55 SOIL SAMPLE SITE Ag-PPM/Au-PPB		0 10 20 30 40 50 METRES	
— TRENCH 82-MB-1		REFER TO FIGURE 3 FOR CLAIM POST LOCATION	
- - - INFERRED GEOLOGICAL BOUNDARY		N.T.S.	DATE: FIGURE
+ + + OMINECA INTRUSIVE ROCKS		94E/2W	JAN. 1983
⊙ ASITKA LIMESTONE			5
x MAGNETITE FLOAT			

### GEOCHEMICAL SURVEY

A total of 12 soil samples were taken at 25-metre intervals on 2 lines spaced 25 metres apart. This small grid is a south extension of a larger grid established in 1981 and reported upon in March 1982. Topofil and compass were used for distance and direction control. All sample sites were flagged with the grid coordinates. Soil from "B horizon" levels was placed in Kraft envelopes and sent to Min-En Laboratories in North Vancouver, B.C. for analysis for gold and silver.

### GEOCHEMICAL ANALYSIS

The analytical procedure for gold and silver is briefly described below:

The soil samples are dried at 95°C and screened by 80 mesh sieve to obtain the minus 80 mesh fraction for analysis.

For gold, a suitable sample, weight 5 or 10 grams, is pretreated with HNO<sub>3</sub> and HClO<sub>4</sub> mixture.

After pretreatment, the samples are digested with Aqua Regia solution, and after digestion the samples are taken up with 25% HCl to suitable volume.

Sample solutions are prepared with Methyl Iso-Butyl Ketone for the extraction of gold.

With a set of suitable standard solutions, gold is analysed by Atomic Absorption instruments. The obtained detection limit is 5 ppb.

For silver, samples weighing 1.0 gram are digested for 6 hours with HNO<sub>3</sub> and HClO<sub>4</sub> mixture.

After cooling, the samples are diluted to standard volume. The solutions are analysed by Atomic Absorption Spectrophotometers using the CH<sub>2</sub>H<sub>2</sub>-Air Flame combination for silver.

### RESULTS OF GEOCHEMICAL SURVEY

Results of the soil sampling survey are encouraging. Six of the twelve samples returned values anomalous in gold (> 50 ppb) and four in silver (> 3 ppm). These results correspond well with float occurrences of massive magnetite that extend for at least 100 metres along the intrusive/limestone contact.

### CONCLUSIONS

Favourable soil geochemistry and significant gold-silver values in copper-iron mineralized skarns are found over certain areas of the Acapulco group of claims. Chalcopyrite, bornite, malachite, galena, sphalerite, magnetite and pyrrhotite mineralization with associated anomalous values of gold and silver occur in narrow veins and more commonly in irregular-shaped skarn bodies along the limestone-intrusive contact area. The mineralization ranges from weakly disseminated to more massive occurrences of galena, magnetite and chalcopyrite/bornite.

Despite the current inconsistent, low precious metal grades and small size of the showings, retention of significant portions of the Acapulco group is recommended.

RECOMMENDATIONS

The potential for economic, limited tonnage gold-silver deposits is listed as fair for the Acapulco group of claims. With regard to this, the following preliminary recommendations are made:

- (1) Further trenching and chip sampling should be carried out on the Star magnetite showings in an attempt to isolate gold mineralization in outcrop.
- (2) Additional trenching and sampling may be carried out over a gold soil anomaly located at 0+00S, 1+50E.
- (3) Three soil lines: 1+00E, 1+50E and 2+00E, should be extended to the south southeast to about 15+00S with a 50-metre sampling interval.

*Mark J. Thompson*

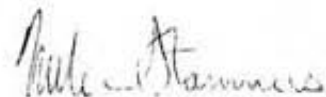


CERTIFICATE OF QUALIFICATIONS

I, MICHAEL A. STAMMERS, of Port Coquitlam, British Columbia, certify that:

1. I am a geologist employed by Serem Ltd. of 300 - 535 Thurlow Street, Vancouver, B.C.
2. I hold a B.A. degree in geology and geography from McMaster University, Hamilton, Ontario.
3. I have worked in geology and mineral exploration for 9 years.
4. The field work described in this report was carried out under my supervision.
5. I have no financial interest in the claims covered by this report or in Serem Ltd.

Vancouver, B.C.



Michael A. Stammers,  
Geologist.

STATEMENT OF EXPENDITURESA. PHYSICAL WORKWages - Field

P. Newman	Hand Trencher	Sept. 5/82	
	1 day @ \$106 x 1.55*		\$164.30
M. Stammers	Geologist/Supervision	Sept. 5/82	
	1 day @ \$137.50 x 1.55		213.13

- Office (Report Preparation)

M. Stammers	Geologist	Dec. 13/82	
	½ day @ \$137.50 x 1.35		\$ <u>92.81</u>

\$ 470.24

Room and Board

2 mandays @ \$52/day

\$ 104.00

Transportation

Helicopter:	0.6 hrs @ \$400/hr	\$240.00
Fuel:	0.6 hrs @ \$4.23/gal x 30 gal/hr	<u>76.14</u>

\$ 316.14

TOTAL PHYSICAL

\$ 890.38

\* Note: Denotes true cost factor of overtime, benefits and administration.

STATEMENT OF EXPENDITURESC. GEOLOGICAL, GEOCHEMICAL WORKWages - Field

M. Stammers	Geologist	Aug. 19, 20, 22, 25, 28, 29/82 Sept. 3, 4, 8, 13/82	8½ days @ \$137.50 x 1.55*	\$1,811.56	
P. Newman	Prospector/Sampler	Aug. 20-22, 25, 28, 29/82 Sept. 3, 4, 8/82	8½ days @ \$106.00 x 1.55	\$1,396.55	
M. Vulimiri	Geologist	Aug. 25, Sept. 5/82	2 days @ \$150.00 x 1.55	\$ 465.00	
D. Dolsen	Prospector/Sampler	Sept. 13/82	½ day @ \$106.00 x 1.55	\$ 82.15	
S. Crawford	Geologist	Aug. 19/82	1 day @ \$120.00 x 1.55	\$ 186.00	
					\$3,941.26

- Office (Report Preparation)

M. Stammers	Geologist	Dec. 13-17/82	4½ days @ \$137.50 x 1.35	\$ 835.31	
	Secretarial/Printing/Drafting			\$ 150.00	
					\$ 985.31

\$4,926.57

Room and Board 21 mandays @ \$52/day

\$1,092.00

Transportation

Helicopter	6.9 hrs @ \$400/hr	\$2,760.00	
Fuel	6.9 hrs @ \$4.23/gal x 30 gal/hr	\$ 875.61	
			\$3,635.61

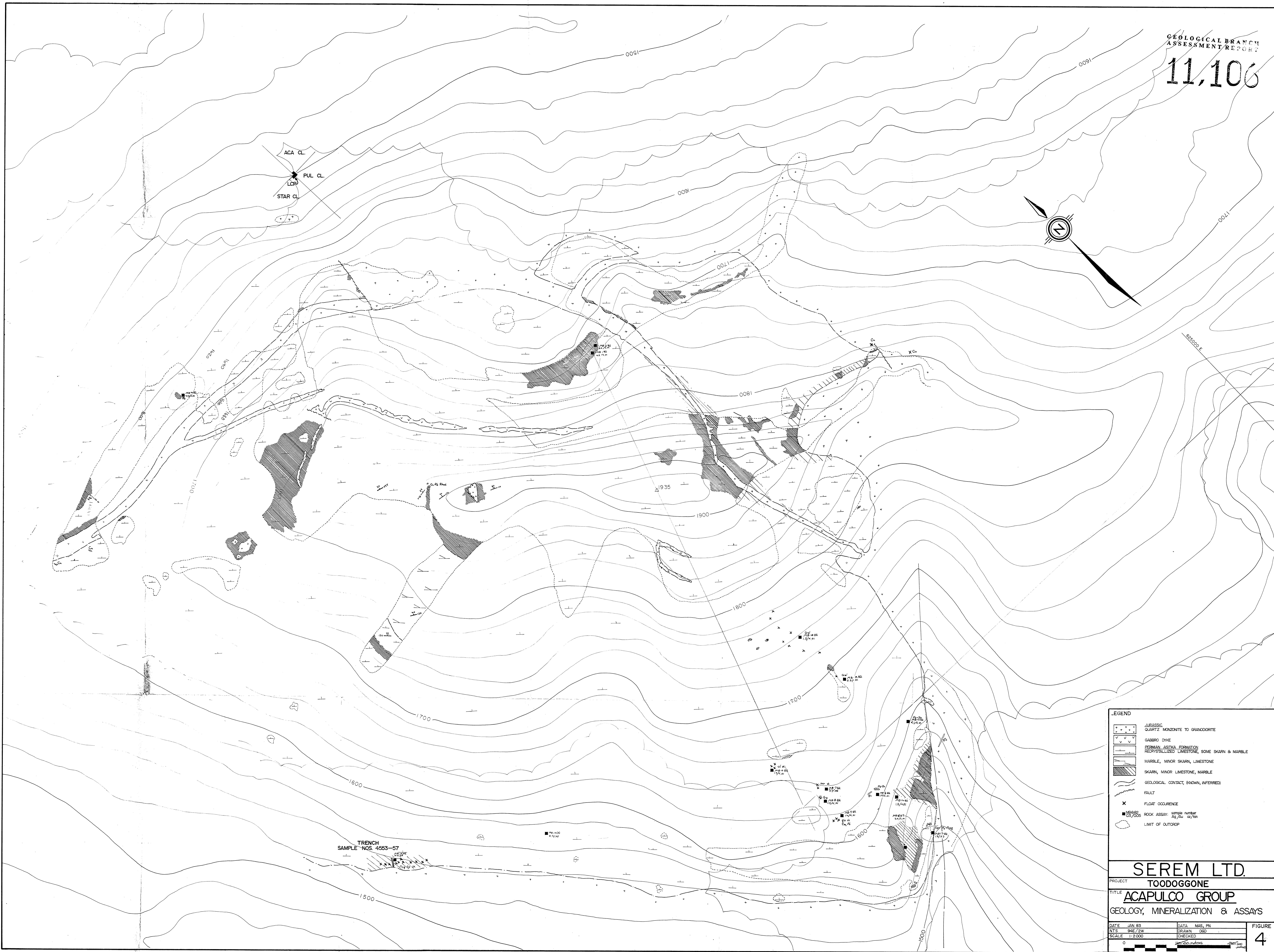
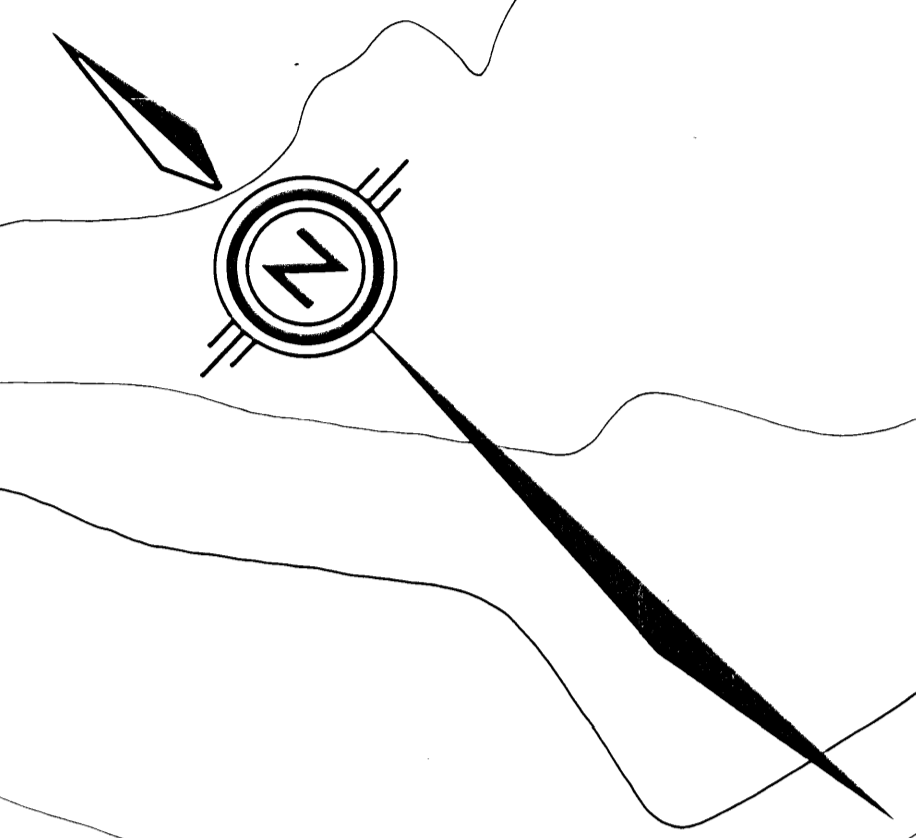
Analysis 12 @ \$7.85 (gold, silver) \$ 94.20

<u>Assays</u>	23 @ \$15.00 (gold, silver)	\$ 345.00	
	5 @ \$ 9.00 (gold re-runs)	\$ 45.00	
			\$ 390.00

TOTAL

\$10,138.38

\* Note: Denotes true cost factor of overtime, benefits and administration.



**LEGEND**

	JURASSIC QUARTZ MONZONITE TO GRANODIORITE
	GABBRO DYKE
	PERMIAN ASITKA FORMATION RECRYSTALLIZED LIMESTONE, SOME SKARN & MARBLE
	MARBLE, MINOR SKARN, LIMESTONE
	SKARN, MINOR LIMESTONE, MARBLE
	GEOLOGICAL CONTACT (KNOWN, INFERRED)
	FAULT
	FLYD AT OCCURRENCE
	ROCK ASSAY: sample number / kg / cu / ton
	LIMIT OF OUTCROP

**SEREM LTD.**

PROJECT TOODOGGONE

TITLE **ACAPULCO GROUP**

GEOLOGY, MINERALIZATION & ASSAYS

DATE JAN 83	DATA MAS, PH	FIGURE <b>4</b>
NTS BAE/SW	DRAWN DGD	
SCALE 1:2000	CHECKED	

0 2000 METERS 2000 FEET